Community Assistantship Program

Conservation Design for Commercial Properties

Prepared in partnership with
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Prepared by
Soraya Hills
Research Assistant

University of Minnesota
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Center for Urban and Regional Affairs (CURA)
University of Minnesota
330 HHH Center
301--19th Avenue South
Minneapolis, Minnesota 55455
Phone: (612) 625-1551
Fax: (612) 626-0273
E-mail: cura@umn.edu
Web site: http://www.cura.umn.edu

Conservation Design for Commercial Properties

Table of Contents

Site Selection

What is Site Selection?
Site selection is simply choosing a development site that reduces environmental impact caused by construction. Locations to avoid include wet lands, large bodies of water, prime farmland, and habitats for endangered species. Additionally, development sites should be chosen within existing commercial areas rather than areas with undeveloped infrastructure.

Benefits of Site Selection:
- Understanding the land before development will prevent any future costs from being incurred.
- Understanding the natural water flow of your property can prevent building in high erosion areas, preventing higher maintenance costs later on.
- Developing in existing commercial district minimizes the need for new infrastructure.
- Avoiding wet lands prevents costs for filling and protects the natural environment.

Site selection is a simple and painless process that benefits everyone. Knowledge of the land to be developed will make the building process smoother. Avoiding water areas, farm land, and endangered habitats will allow the beauty of our area to be preserved. In short, site selection is a win -win for everyone.

Success Story: Syvantis Technologies in the Fairview Conservatory Office Park saved a potential $12,000 in water pumping costs by carefully selecting their site of development.

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- Syvantis Technologies

Benefits of On-Site Renewable Energy:

- Both solar and wind power decrease the use of fossil fuels
- Possible rebates for solar use
- Solar reduces the energy bill
- Reduces pollution and carbon dioxide outputs
- Excess solar energy can be bought back by the local power company

Site Consciousness

What is Site Consciousness?

Site consciousness is planning the construction process in which the minimal amount of biodiversity and natural environment is disturbed.

How can Site Consciousness be accomplished?

- Limit site disturbance as much as possible. *Leadership in Energy and Environmental Design* (LEED) suggests to clear cut no more than 40 feet beyond building perimeters, 10 feet beyond surfaced walkways, and 15 feet beyond primary roadway curbs and main utility branch trenches.
- Provide vegetated open space equal to 20% of a project's site area or exceed the local zoning's open space requirement for the site by 25%
- Site parking and pedestrian areas so that they have sun exposure for assistance in melting snow or ice.
- Where possible, share facilities with neighbors.

Benefits of Site Consciousness:

- Using the natural topography, soils, and vegetation preserves natural habitats and costs less than the standard procedures of grading, displacing dirt, replacing topsoil, preparing new sod, and planting new trees and shrubs.
- Undisturbed areas of open space may have cost incentives such as reduction of park fees.
- Open spaces are both aesthetically pleasing and also adds property value.
- Asphalt expenses are reduced when the number of spaces is limited.
- Cutting down less trees provides more shade, which helps reduce the cost of air conditioning.

On-Site Renewable Energy

What is On-Site Renewable Energy?
On-Site renewable energy is a simple way to help reduce the use of fossil fuels and better the environment. Two applicable means of on site renewable energy for the area are solar and wind power.

How can On-Site Renewable Energy be accomplished?

- Wind Power (Wind power can be purchased through your local power company in 100kWh blocks. Each block is an additional $.50 added to the electrical bill. This would mean that at 1200kWh, only $6 additional dollars would be added to the monthly bill.)
- Solar Power (Solar Power panels can be in stalled on property grounds. The solar panels adjust themselves according to time of year for maximum output. Solar panels can be hooked up to a separate energy meter so that energy output can be measured.)

- There is no price difference between low VOC carpets and their alternatives. Low VOC/ green carpets have actually been around for about five to six years now, however have not been advertised as a "green" product. Low VOC carpeting has no additional cost compared to standard carpeting with the same quality level.
- Low emitting materials provide for a healthier air quality and work place. Fewer employees will become sick, saving valuable work time and money.

Transportation Alternatives

What are Transportation Alternatives?

- Fuel efficient vehicles
- Car pooling
- Public transportation
- Walking/Biking

How can the promotion of Transportation Alternatives be accomplished?

The promotion of Transportation Alternatives can be accomplished by reserving 3-5% of prime parking for fuel efficient vehicles.

Benefits of Alternative Transportation:

- As gas and fossil fuel prices continue to increase, it is important to begin encouraging more fuel efficient ways of transportation.
- Reserving prime parking incurs minimal costs.

Storm-Water Design

What is Storm-Water Design?
Storm-water design is the process in which storm water runoff is managed in order to limit disruption and pollution.

How can Storm Water Design be accomplished?

- Bio-retention areas and rain gardens
- Porous pavement (Porous pavement is a special type of pavement that allows rain and snowmelt to pass through it, thereby reducing the runoff from a site and surrounding areas. In addition, porous pavement filters some pollutants from the runoff if maintained properly.)

- Rain barrels (Rain barrels catch rainfall from gutters. This minimizes toxins and contaminants entering the soil.)

Environment Friendly Materials

What are Environment Friendly Materials?
Low emitting materials are used to reduce indoor air contaminants that are odorous, irritating, and/or harmful. Using low emitting materials allow for better comfort and protects the well-being of both installers and occupants.

How is using Environment Friendly Materials accomplished?

- Low VOC (volatile organic compound) paint
- Low VOC carpet
- Stained concrete instead of carpeting
- Low VOC/ green cubicles

Benefits of Environment Friendly materials:

- Low VOC paint costs an average of $5 more a gallon, but needs fewer coats than traditional paint (1:2)
- Stained concrete is an attractive alternative to carpet that emits zero volatile organic compounds and starts around $7 per square foot.

Environmental Tobacco Smoke Control

What is Environmental Tobacco Smoke (ETS) control?

Environmental Tobacco Smoke Control is placing rules on how far one can smoke from the buildings, if smoking is allowed at all.

How can ETS control be accomplished?

- All smoking areas outside are at least 25 feet away from entries, outdoor air intakes and operable windows.
- A smoke free campus is an option as well

Benefits of ETS control:

The effects of second hand smoke on humans are well known in today's society and are truly devastating. Second hand smoke is also unhealthy for the surrounding vegetation and building quality. Eliminating or reducing these contaminants will improve the health of the people and environment on the property.

Benefits of Storm-Water Design:

- Bio-retention areas are aesthetically pleasing and costs less than the installation of curb and gutter storm-water sewers.
- Porous pavement aids in water treatment by making less need for curbing and storm sewers, improves road safety by creating better skid resistance, recharging local aquifers, and removing pollutants.
- Water from rain barrels can be used for watering lawns and gardens, thereby reducing landscaping costs.

Success story:

Maplewood, Minnesota in 1995 installed rain gardens within two blocks of residential areas because of problems with periodic flooding. The rain gardens effectively slowed storm water runoff without the need of added infrastructure. Since that time Maplewood has considered rain gardens such a success that nearly 250 more have been implemented in other neighborhoods. (http://www.forester.net/sw_0301_low.html)

Water Efficient Landscaping

What is Water Efficient Landscaping?
Water efficient landscaping involves limiting or eliminating the use of portable water for landscaping irrigation.

How can Water Efficient Landscaping be accomplished?

- Rain barrels that capture water can be used to water the landscape and gardens.
- Planting indigenous species of vegetation

Benefits of Water Efficient Landscaping:

- Using captured water eliminates the cost of portable water.
- Natural vegetation eliminates the need for sprinklers, pesticides, and fertilizers.
- Natural vegetation can help prevent erosion.
- Low-mow grasses can save thousands of dollars per year by significantly decreasing mowing and irrigation costs because low-mow grass needs less maintenance and up keeping.

Material Re-Use

What is Material Re-Use?
Material Re-use is putting old, but still working item to use or re-use.

How can Material Re-Use be accomplished?
Material re-use is accomplished by taking all old, but still usable, furniture, doors, cabinetry, etc. and reusing them. Wherever possible explore the idea of purchasing recycled wood and or other recycled products.

Benefits of Material Re-Use:
The re-use of materials not only saves money, but alleviates some of the demand for new products, which in turn will reduce tree consumption, manufacturing pollutants, and any other associated manufacturing harms.

Collection of Recyclables

What is Collection of Recyclables?
Collection of recyclables is simply placing recyclables into recycling bins instead of throwing everything in the trash.

How can the Collection of Recyclables be accomplished?
Recycling is easily accomplished by placing well labeled recycling bins throughout the work space.

Benefits of Collection of Recyclables:

- When recycling procedures are implemented, a smaller trash container is needed, which allows a smaller monthly garbage bill.
- Recycling is the easiest way to help reduce the need for more landfills.

Success story:
After a span of twenty years, one office building in the Fairview Conservatory Office Park is projected to save $8130 in their garbage bill by recycling

Optimal Energy Performance

What is Optimal Energy Performance?
Optimal energy performance is beneficial both financially and environmentally. Reducing energy consumption works towards reducing environmental and economic stressors caused by excessive energy use.

How can Optimal Energy Performance be accomplished?

- Indoor and outdoor Compact “mini” fluorescent light fixtures
- T5 and T8 lamps
- Cycled air conditioning

(Cycled A/C allows the local power company to turn the air off every fifteen minutes, during peak usage times in exchange for reduced electric rates.)

- Shut down all PC’s during non-business hours.
- Energy efficient heat pumps

Benefits of Optimal Energy Performance:

- Compact mini fluorescent lights pay for themselves in three years.
- T5 & T8 lamps in most applications have a 100% return on investment in less than one year.
- Cycled air saves money by year two and pays for itself by year four.
- Shutting down all PC's will save energy and reduce the amount of carbon dioxide emitted.
- On average a heat pump will pay for itself in only three years.

Optimizing energy performance and efficiency is not only good for the environment by reducing the demand for electricity and helping to minimize carbon dioxide emissions, but is also cost effective.

Success story:

- Syvantis Technologies with Fairview Office Park will save $3,776.38 over a twenty year period by using fluorescent lights
- Over a period of twenty years, Syvantis is projected to save $1,810 with cycled air conditioning
- Using a heat pump, Syvantis Technologies can save over $18,000 in a period of twenty years.
- Shutting down all PC's in Syvantis offices will save $90 per PC in electricity and eliminate 1200 pounds of carbon dioxide each year.